

Physico-chemical Investigations of the Sensitivity of the Benzene Cycle to Polarizing Actions of the Solvent and the Field of Force. I. Magneto-optical Examination of the Intermolecular Interactions in Binary Nitrobenzene Systems of the Alkyl-substituted Benzene Derivatives

5/076/60/034/010/005/022
B015/B064

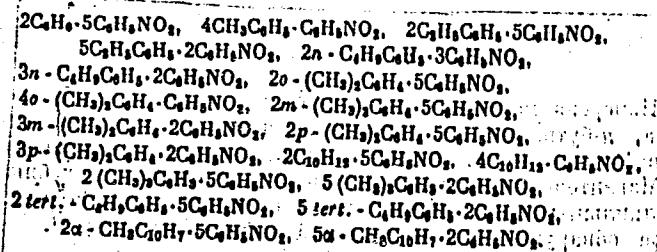
increase of the dipole moment and the polarizability, and weakens the magneto-optical activity (Fig. 2, Curves 1-4). The cyclization of an n-butyl chain on the benzene cycle increases the magneto-optical activity (Fig. 3, Curves 1,2). A prolongation and cyclization of the alkyl groups in α -position changes the dipole moment and the magneto-optical activity (Fig. 3, Curves 2,3) only inconsiderably. A symmetrization of the methyl groups arranged around the benzene cycle eliminates polarization and weakens the magneto-optical activity (Fig. 3, Curves 4,5). A tertiary carbon atom increases the dipole moment and weakens the magneto-optical activity (Fig. 4, Curves 1,2). An isomerization of the butyl group weakens the magneto-optical activity (Fig. 2, Curve 4, Fig. 4, Curve 2). As a functional component of α -methyl naphthalene a diene system polarized by a methyl group increases the magneto-optical activity (Fig. 4, Curves 3,4)

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Physico-chemical Investigations of the Sensitivity of the Benzene Cycle to Polarizing Actions of the Solvent and the Field of Force.
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considerably. From the diagrams (Figs. 2-4) it is possible to determine the formation of the following molecular compounds:



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Physico-chemical Investigations of the
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The reaction mechanism of such compounds can be represented as polarization
and orientation of the molecules of alkyl derivatives of benzene in the
field of forces of the dipole molecules of nitrobenzene with a complete or
partial compensation of the dipole moment. N. Tavadze and M. Vol'kenshteyn
are mentioned in the text. There are 4 figures and 8 references:
5 Soviet, 1 British, 1 German, and 1 US.

ASSOCIATION: Khar'kovskiy polytekhnicheskiy institut
(Khar'kov Polytechnic Institute)

SUBMITTED: December 10, 1959

Card 5/5

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CHESHKO, F.F.; SHEVCHENKO, O.I.; BOCHAROVA, V.V.; LAVYGIN, I.A.

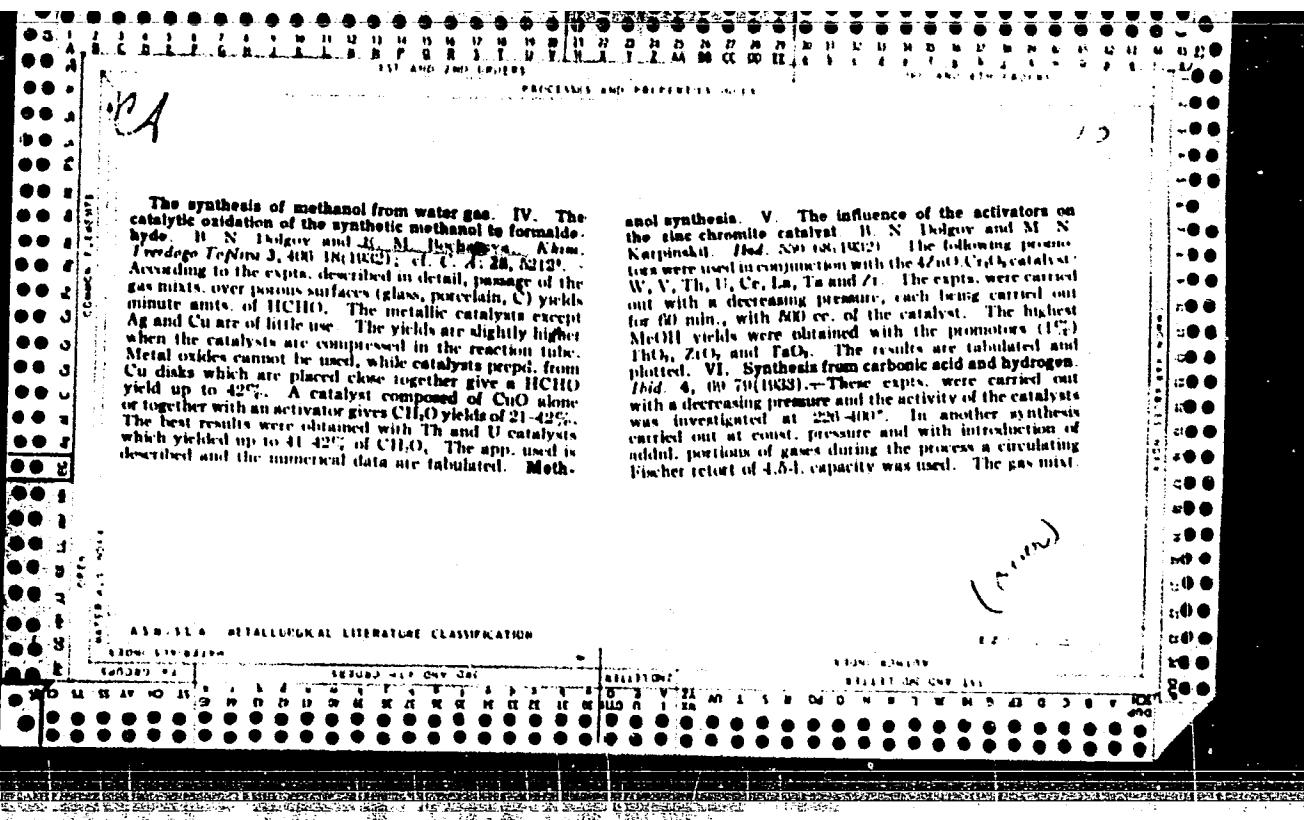
Physicochemical studies of the sensitivity of the benzene ring to the polarizing effect of the solvent and of the force field. Part 2: Spectrographic and refractometric study of intermolecular reactions in nitrobenzene binary systems of n-butylbenzene and tetralin, toluene, and α -methylnaphthalene. Zhur.fiz.khim. 37 no.10:2190-2202 O '63.
(MIRA 17:2)

1. Khar'kovskiy politekhnicheskiy institut.

LINDENBAUM, A.L.; BOCHAROVA, Ye.G.

Treatment of speech and movement disorders in cerebra palsied children. Pediatriia 38 no.12:47-51 '60. (MIRA 14:2)

1. Iz respublikanskoy shkoly-internata dlya detey s rasstroystvami rechi (dir. T.T. Parkhomenko) (Khar'kov).
(SPEECH, DISORDERS OF) (CEREBRAL PALSY)



It was prep'd. by mixing CO₂ and H₂, compressing it and keeping it in steel bottles. The reaction CO₂ + 3H₂ → CH₃OH + H₂O, as shown in the eqns., proceeds in 2 stages (1) CO₂ + H₂ → CO + H₂O and (2) CO + 2H₂ → CH₃OH. The velocities of the reactions are different depending upon the ratio of gases, temp., catalyst, etc. Nineteen different catalysts and their mixts. were investigated and it was found that the max. loss at 325° was 1.5% lower than that for MeOH from CO and H₂. The following catalysts were used in various combinations: MgO, Fe₂O₃, ZnO, ThO₂, V₂O₅, Cr₂O₃, CuO, NiO, CdO, MnO and Cr₂O₃. The highest MeOH yields were obtained with ZnO + 4.5% CdO + 5% Fe₂O₃ and ZnO + 2% Fe₂O₃ + 1% CuO, reaching 31.5 and 30%. However, when maintaining a const. pressure by the introduction of new portions of gas, working at 325° and 210 atm., and using the catalyst ZnO + 5% CdO, the yield of CH₃OH could be raised to 33% by weight. Changes in the velocity of the flow of the gas mixt. caused lower yields of MeOH because of the slowing down of the conversion of CO₂ to CO. The crude MeOH contained C₂H₆ traces, C₃H₈ + none, HCOOH trace, AcH traces, AcCO trace, AcOH about 0.03-0.06% and Fe(CO)₅ none. A pure 99% MeOH is obtained by distn. and rectification. The gas used in the synthesis consisted of 1 vol. CO per 3-3.5 vols. H₂ with the admst. of 0.2-0.8% N₂.

A. A. Borshlinsk

ca

21

Synthesis of formaldehyde from water gas. H. M.
Buchareva and N. N. Dolgov. J. Gen. Chem. (U. S.
S.S.R.) 4, 145-82 (1934).—The best results of 0.6-1.2%
 CH_2O were obtained with 4% Mn/K catalyst at 40°
and 150 atm. pressure.

410-11A METALLURGICAL LITERATURE CLASSIFICATION

Synthesis of the higher alcohols from water gas under pressure. E. M. Bocharova and B. N. Dulgov. *Compt. rend. acad. sovi. URSS*, 3, 115-118 (in English 118-20) (1934).—CO and H₂ react under pressure with alkalinized methanol catalysts to give a condensate consisting mainly of a mixt. of various alcs. (from Me to octyl). Syntheses were carried on in a circulation app., 4 l. in vol., at a temp. of 350-450° and with a falling (220-150 atm.) or const. (220 atm.) pressure and with a space velocity of 5-6000. In every case 300 cc. of the catalyst in the form of shavings was used. The optimum ratio of CO/H₂ was about 1/1. Zn aluminate gave unsatisfactory results. The substitution of Na for K completely cuts down the yield of oil. The group of catalysts (4ZnO.PbO, 4ZnO-PbO.Zn(O₂), 4ZnO.PbO.0.2Zn(O₂), and 4ZnO.PbO-0.2Zn(O₂).CdO) gave very low yields for all attainable temps. Alk. Zn vanadates, 4ZnO.V₂O₅.KOH and Zn(O₂).V₂O₅.KOH gave the best results. An increase in percentage of Zn lowers the yield. A decrease in V₂O₅ content from 34.24% to 8.00% lowers the yield of oil from 41 to 17%. W. J. Peterson

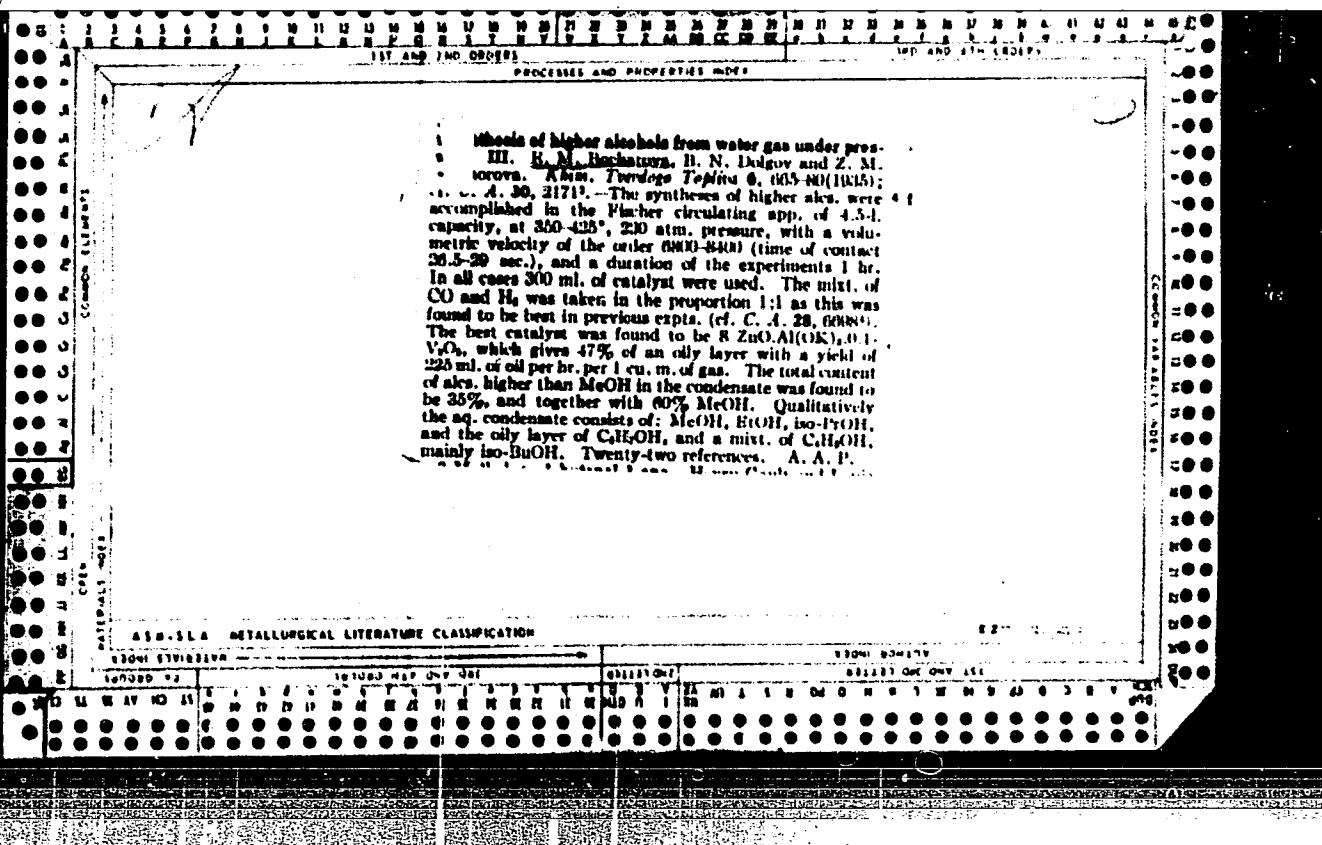
W. J. Peterson

APPROVED FOR RELEASE: 06/09/2000

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Ka

21

Synthesis of alcohols of high molecular weight from
water gas under pressure. IV. Rechecking of the
methods for analysis of the condensate. N. M. Koch-
aryan, B. N. Dolgov, Yu. N. Petrova and N. S. Yai-
skovskaya. Khim. Promst. 8, 333-45 (1957);
cf. C. A. 50, 81479. Existing methods for the analysis
of the condensate were investigated and rechecked.
Twenty-six references. A. A. Podgorny

ABM-SLA METALLURGICAL LITERATURE CLASSIFICATION

SECOND EDITION

EDITION 1970

EDITION 1970

Bc

PROGRESS AND PROBLEMS IN E

160 ADD 8TH SEPTEMBER

B-II-1

Synthesis of higher alcohols from carbon dioxide and hydrogen under pressure. V. K. M. BOTVINNIKOVA, B. N. DOLGOV, K. I. KAM-KOGAN, and J. N. PISTNOVA [Zhur. Tverd. Topl., 1957, 8, 1107—1121; cf. B., 1958, 404].—The experiments were carried out at 350—435°/220 atm. with varying CO_2 : H_2 ratios and different catalysts. The most active catalysts were $\text{SiO}_2\text{-Al}(\text{OH})_3$, 0.1% $\text{V}_2\text{O}_5\text{-SKOH}$ and $\text{SiO}_2\text{-Al}(\text{OH})_3$, 0.1% $\text{V}_2\text{O}_5\text{-0.1MnO}_2\text{-SKOH}$. A condensate consisting of H_2O 70, MeOH 25, and higher alcohol 5% was obtained. The optimum CO_2 : H_2 ratio was 1:3.2 and the max. yield of higher alcohols 27—40 ml./g. of catalyst/hr. Methods of analysing MeOH -higher alcohol mixtures are discussed.

D. G.

450-004 METALLURGICAL LITERATURE CLASSIFICATION

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APPROVED FOR RELEASE: 06/09/2000

CIA-RDP86-00513R000205710018-7"

Estrogens and the Natural Radiation Sensitivity of Mice SOV/2o-122-5-15/56

animals which have not had any young. The mice were castrated 5-6 days after bringing forth young. The control animals were subjected to the same operation as was performed on the test animals, but their ovaries were not removed. All categories of female mice were irradiated 4 weeks after the operation had been performed. In the second part of this paper the dependence of the radiation-sensitivity of female mice in the stage of the "estral" (estral'nyy) cycle (in which they were also during irradiation) was investigated. The radiation-sensitivity of castrated mice is equal to that of not castrated mice. A table shows the results obtained by tests carried out for the purpose of determining the fatal radiation dose in the case of mice which had been in various stages of the "estral" cycle during irradiation. According to these data there is no difference in the radiation sensitivity of the four groups of mice which had been compared. The opinions expressed by various other authors are discussed and some of them are declared to be wrong. There are 2 tables and 6 references, 2 of which are Soviet.

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Estrogens and the Natural Radiation Sensitivity of Mice SOV/2o-122-5-15/56

ASSOCIATION: Institut biologicheskoy fiziki Akademii nauk SSSR
(Institute of Biological Physics of the Academy of Sciences USSR)

PRESENTED: May 29, 1958, by L.S.Shtern, Academician

SUBMITTED: May 25, 1958

Card 3/3

17(4,10)

SOV/20-126-1-52/62

AUTHORS:

Shapiro, N. I., Bogharova, Ye. M., Belitsina, N. V.

TITLE:

On the "Oxygen-effect" Observed in the Case of Radiation Injuries in Vegetable and Animal Cells (O "kislorodnom effekte", nablyudayemom pri luchevom povrezhdenii rastitel'nykh i zhivotnykh kletok)

PERIODICAL:

Doklady Akademii nauk SSSR, 1959, Vol 126, Nr 1, pp 191-194 (USSR)

ABSTRACT:

One of the most universal radiobiological laws is the intensification of the ionizing effect in media containing oxygen. The "oxygen-effect" is observed in a relatively small specific ionization. According to numerous statements, it is related to the mechanism of the radiolysis of water (Ref 1). According to the latest investigations, the effect mentioned is much more complicated, since oxygen increases the damage, which has nothing to do with the radiolysis of water (Refs 2-11). Despite the data already known more facts are necessary to explain the "effect". The present article is meant to prove the "effect" in 2 completely different types of cells, where it is in no relation to the radiolysis of water. The objects used were barley seeds of the type "Wiener", and cells of the

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SOV/20-126-1-52/62

On the "Oxygen-effect" Observed in the Case of Radiation Injuries in Vegetable
and Animal Cells

ascitic carcinoma of Ehrlich in mice. The chromosome aberration served as an index of the damage. The total dose of radiation amounted to 10000 r for barley, with an intensity of 515 r/min. Variations of the experiment were: I. 10 kr, II. 10 kr, and besides for 30 min O_2 was blown through the water in which afterwards the seeds were soaked. III. - as II, but $4 \cdot 10^{-3}$ m sodium metabisulphite solved in water beforehand. IV. - as III, but without O_2 . There were also 3 control variants. A summary of the results is given in table 1. Therefrom it may be seen that the frequency of the developing chromosome disturbance increases rapidly in the case of O_2 treatment immediately before the seeds are exposed to ray treatment. The result achieved by the introduction of sodium metabisulphite shows that the generally comprehensible radiation-effect also includes that part of the damage of the object which, although due to the O_2 -influence, has nothing to do with the radiolysis

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On the "Oxygen-effect" Observed in the Case of Radiation Injuries in Vegetable
and Animal Cells

SOV/20-126-1-52/62

of water. This participation can be estimated to be about one third. The cells of the ascitic carcinoma were studied in vitro in the following variants: I. radiation in the air, II. the same under the conditions of a vacuum, III. - as in II, followed by 2 hours in the vacuum. The results achieved (Table 2) prove the bibliographical data on the existence of an "oxygen-effect" (Ref 14). Analogous to barley in this case it was not connected with the radiolysis of water. This evidence of the mentioned effect in 2 objects systematically so different from each other, proves its frequency in radiobiological reactions. Its physico-chemical mechanism deserves further investigations. There are 2 tables and 14 references, 1 of which is Soviet.

ASSOCIATION: Institut biologicheskoy fiziki Akademii nauk SSSR (Institute of Biological Physics of the Academy of Sciences, USSR)

PRESENTED: February 2, 1959, by A. L. Kursanov, Academician

SUBMITTED: February 2, 1959

Card 3/3

SHAPIRO, N.I.; BOCHAROVA, Ye.M.

Two types of radiation after effects observable in barley
seeds. Dokl.AN SSSR 133 no.2:462-465 J1 '60.
(MIRA 13:7)

1. Institut biologicheskoy fiziki Akademii nauk SSSR.
Predstavleno akademikom V.A.Bogolyubovom.
(PLANTS, EFFECT OF GAMMA RAYS ON)
(CHROMOSOMES)

YAKUSHKIN, M.I.; BOCHAROVA, Ye.M.

Ammonolysis of the technical fractions of C₇ - C₉ and C₁₀-C₁₆
fatty acids to nitriles. Khim. prom. 41 no.8:576-577 Ag '65.
(MIRA 18:9)

BOCHAROVA, YE. P.

Translation from: Referativnyy Zhurnal, Geografiya, 1957, Nr 1, p. 11 (USSR) 14-1-112

AUTHORS: Aleksandrova, Yu. Ya, Bocharova, Ye. P., Knorozova, V. N.
Ieytgammel', Ye. E. Sviridov, A. Ye., Sokolova, N. A. and
Eglit, V. I.

TITLE: Experimental and Practical Work of the MOSMT (Opytno-
proizvodstvennaya rabota MOSMT)

PERIODICAL: In: Opyt stereotopogr. s"yemki, Moscow, Geodesizdat, 1956, pp. 5-15

ABSTRACT: Brief description of field location; description of aerial, field
and office work in stereotopographic surveying on a scale 1:5,000
for compiling topographic plans of coal basins.

Card 1/1

MERZON, Emil' Davidovich; IVANOV , N.N., prof., red.; BOCHAROVA, Yu.F.,
red.; GARINA, T.D., tekhn. red.

[Collection of problems on mechanical drawing] Zadachnik po
mashinostroitel'nomu chercheniu. Pod red. N.N.Ivanova. Mo-
skva, Gos.izd-vo "Vysshiaia shkola," 1961. 217 p.

(MIRA 15:3)

(Mechanical drawing—Study and teaching)

TAKHTAMYSHEV, Andrey Georgiyevich; BOCHAROVA, Yu.F., red.;
MURASHOVA, V.A., tekhn. red.

[Metal elements] Metallicheskie konstruktsii. Issd.2.,
perer. i dop. Moskva, Vysshiaia shkola, 1963. 322 p.
(MIRA 16:5)
(Steel, Structural) (Aluminum alloys)

ZINOV'YEV, Vladimir Andreyevich, prof.[deceased]; PRISHED'KO,
Nikolay Avtomonovich; VIL'NITS, Samuil Avseyevich;
FADEYEV, I.I., red.; BOCHAROVA, Yu.F., red.

[Machine parts] Detali mashin. Izd.2. Moskva, Vysshaya
shkola, 1964. 347 p. (MIRA 17:12)

POSVYANSKIY, Aleksandr Davydovich; FEDOTOV, G.I., nauchn. red.;
BOCHAROVA, Yu.F., red.

[Brief course in descriptive geometry] Kratkii kurs na-
chertatel'noi geometrii. Izd.2., perer. Moskva, Vysshiaia
shkola, 1965. 236 p.
(MIRA 18:4)

IVANOV, Ivan Tikhonovich; BOCHAROVA, Yu.F., red.

[Technical maintenance of buildings] Tekhnicheskaya
eksploatatsiya zdanii. Moskva, Vysshiaia shkola, 1965.
211 p. (MIRA 18:4)

GENKIN, Avgust Emmamuilovich; BAKLANOV, N.A., retsenzent; PETROV,
A.M., retsenzent; BOCHAROVA, Yu.F., red.

[Equipment of chemical plants] Oborudovanie khimicheskikh
zavodov. Moskva, Vysshiaia shkola, 1965. 327 p.
(MIRA 18:5)

BEZUKHOV, Nikolay Ivanovich; BOCHAROVA, Yu.F., red.

[Examples and problems in the theory of elasticity,
plasticity and creep of materials] Primery i zadachi po
teorii uprugosti, plastichnosti i polzuchesti. Moskva,
Vysshiaia shkola, 1965. 319 p. (MIRA 18:6)

SHAPIRO, David Moiseyevich; PODCHVANOVA, Alevtina Ivanovna;
MIRONOV, Aleksandr Nikitovich; BOCHAROVA, Yu.F., red.

[Collection of problems on the strength of materials]
Sbornik zadach po soprotivleniiu materialov. Izd.2.,
perer. Moskva, Vysshiaia shkola, 1965. 359 p.
(MIRA 18:5)

BRAUN, David Anisim., RYB'YEV, I.A., prof., doktor tekhn. nauk,
retsenzent; UINBERG, B.G., prof., retsenzent; KOROVNIKOV,
P.D., dcts. kand. tekhn. nauk, retsenzent; AVERKIYEV, V.I.,
dcts. kand. tekhn. nauk, retsenzent; BOCHAROVA, Yu.F., red.

[New materials in engineering] Novye materialy v tekhnike.
Moskva, Vysshiaia shkola, 1965. 194 p. (MIRA 18:10)

BRAUN, David Anisimovich, dots. kand. tekhn. nauk; RAZYGRAYEV,
Aleksandr Matveyevich, inzh.; PESHKOV, Ye.O., retsenzent;
KHUTIN, G.M., retsenzent; BOCHAROVA, Yu.F., red.

[Technology of metals and structural materials] Tekhnologiya
metallov i konstruktionskiye materialy. Moskva, Vys-
shaya shkola, 1965. 373 p. (MIRA 18:12)

VERIZHENKO, Yevgeniy Petrovich; LIVSHITS, Yakov Davidovich;
KOGAN, Ye.G., prepodavatel', retsenzent; BOCHAROVA,
Yu.F. red.

[Statics of structures] Statika sooruzhenii. 4. izd. Moskva,
Vysshiaia shkola, 1965. 323 p. (MIRA 19:1)

1. Moskovskiy arkhitekturno-stroitel'nyy tekhnikum (for
Kogan).

BATOG, A.Ye.; TATARSKAYA, I.M.; BOCHAROVA, Yu.Ye.; YENAL'YEV, V.D.;
ROMANTSEVICH, M.K.

Synthesis of peroxide and hydroperoxide of tertiary butyl.
Ukr.khim.zhur. 31 no.2:207-208 '65. (MIRA 18:4)

l. Ukrainskiy nauchno-issledovatel'skiy institut plasticheskikh
mass, Donetsk.

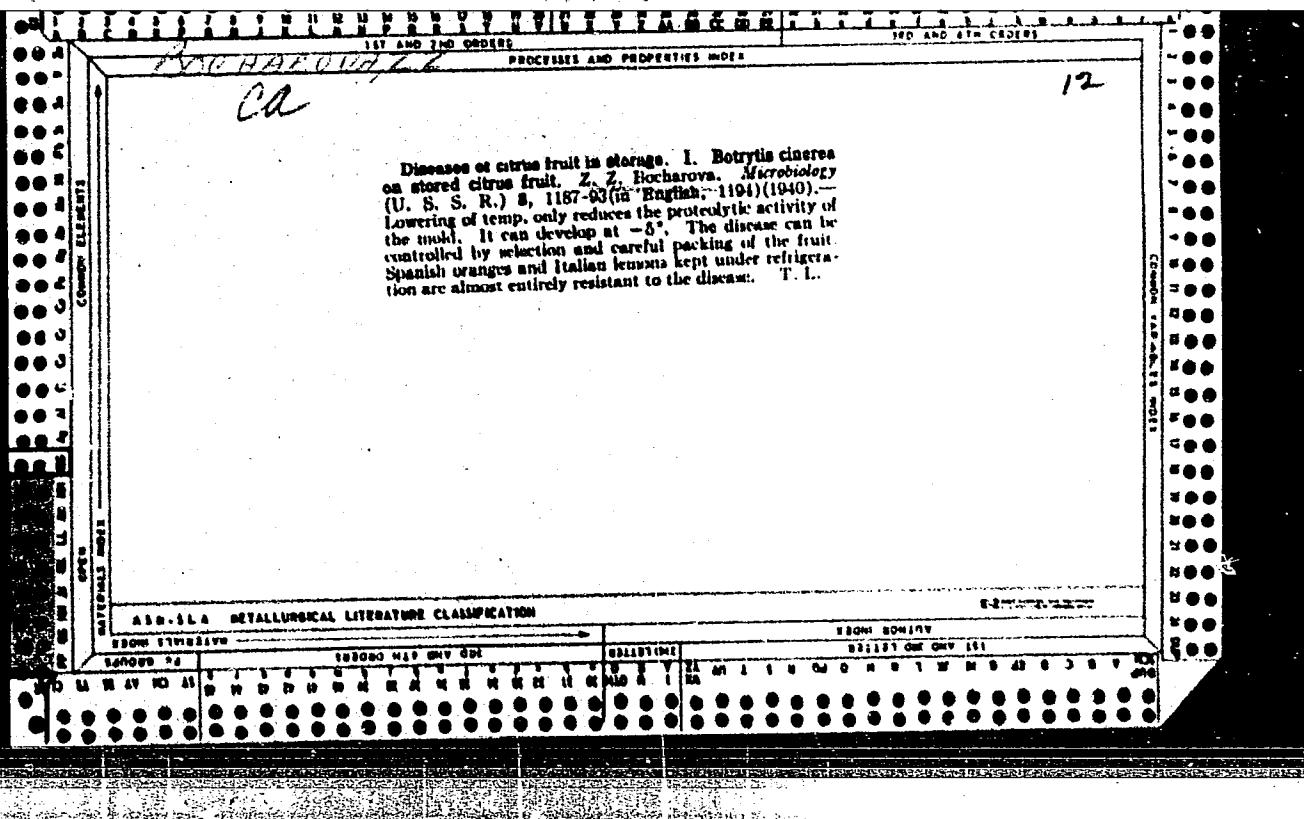
Балашовъ, 2. 7.

СИСТИАКОВ (Ф. М.) & ВОСНОВА (Мимо З. З.). Влияние низких температур на микроорганизмы. II. IV. Влияние низких температур на развитие плодовых грибков. [The influence of low temperatures on micro-organisms. II. IV. The influence of low temperatures on mould development.]—Микробиол. [Microbiol.], v. 4, pp. 498-514; 7, pp. 838-842, 1 fig., 1 graph, 1938. [English summaries. Received April, 1939.]

A fully tabulated account is given of the writer's studies at the Moscow Refrigeration Research Institute on the influence of low temperatures on mould growth on stored foodstuffs, which showed that the minimum temperature for the development of the fungi concerned lies well below 0°C . Delay in the appearance of visible growth and in

conidial formation increased *pari passu* with a decline in temperature and reached a maximum just before the limit of total inhibition. The following were the most resistant to low temperatures: *Penicillium glaucum*, *Mucor* sp., *Botrytis cinerea*, *Cladosporium herbarum* (developing freely at -5°), *Chaetomium freenii* (from white sturgeon in a refrigerator), *Monilia nigra*, *Thamnidium elegans* [R.A.M., xxiii, p. 255], and *Fusarium culmorum*.

No mould growth was observed during a period of 19 months at -18° and -12°, and at -8° fungal development occurred only on isolated pieces of meat and fish contracting infection during storage. On beef wort agar visible growth of *C. freenii* became apparent only after 13 months, the corresponding period for development on fresh beef being only eight months after inoculation and transference to the storage chamber. On the other hand, *T. elegans* failed to develop after a year on fresh beef, whereas on wort agar visible growth appeared on the 54th day.



KHOLOPOVA, A.; BOCHAROVA, Z.^(?) OLENEV, Yu.

Effect of cooling sweet butter immediately after processing
upon its stability in storage. Khol.tekh. 30 no.4:35-40 O-D '53.
(MLRA 7:3)

1. VNIKhI.

(Cold storage) (Butter--Preservation)

PANOV, N. [translator]; KARTUZOV, P. [translator]; BOCHAROVA, Z. [translator];
KURYLEV, Ye.S., dotsent [translator]; RYUTOV, D.G., kand.tekhn.
nauk, red.; CHICHKOV, N.V., red.; SUDAK, D.M., tekhn.red.

[Ninth International Congress on Refrigeration; collection of
reports] IX Mezhdunarodnyi kongress kholoda. Sbornik dokladov.
Pod red. D.G.Ryutova. Moskva, Gos.isd-vo torg.lit-ry, 1958.
197 p. (MIRA 12:7)

1. Mezhdunarodnyy kongress kholoda. 9th, Paris, 1955. 2. Laboratoriya tekhnicheskoy informatsii Vsesoyuznogo nauchno-issledovatel'skogo instituta kholodil'noy promyshlennosti (im.A.I. Mikoyana) (for Panov, Kartuzov, Bocharova). 3. Leningradeskiy tekhnologicheskiy institut kholodil'noy promyshlennosti (for Kurylev).

(Refrigeration and refrigerating machinery--Congresses)

BOCHAROVA, Z.; VISHNYAK, M., FEDOROVA, V.

Growth of wood-destroying fungi at various temperatures. Khol.tekh.
35 no.5:41-43 S-0 '58. (MIRA 11:11)

1. Vaesoyuznyy nauchno-issledovatel'skiy institut kholodil'noy
promyshlennosti (for Bocharova). 2. Trest Soyusantiseptik (for
Vishnyak, Fedorova).
(Fungi)

BOCHAROVA-MESSNER, O. N.

Wing formation during the postembryonal stages of development in dragonflies (order Odonata). Trudy Inst.morf.zhiv. no.27:187-200 '59. (MIRA 13:2)

1. Laboratoriya morfologii bespozvonochnykh zhivotnykh Instituta morfologii zhivotnykh im. A.N.Svertseva AN SSSR.
(Dragonflies) (Wings)

17(4)

AUTHOR: Bocharova-Messner, O. M. SOV/20-126-6-65/67

TITLE: The Peritrophic Membrane Inside the Intestine of Eurygaster integriceps Put. (Peritroficheskaya pereponka v kishechnike vrednoj cherepashki (Eurygaster integriceps Put.))

PERIODICAL: Doklady Akademii nauk SSSR, 1959, Vol 126, Nr 6, pp 1381-1384 (USSR)

ABSTRACT: The sucking insects to which the Eurygaster integriceps Put. belongs do not have the above mentioned membrane. This gave rise to the statement that its function lies in the protection of the cells of the intestinal epithelium against mechanical damage by food particles (Refs 1, 7, 9, 13, 16). However, this opinion had to be revised. (Refs 2, 3, 8, 11, 14, 15). The said membrane has not yet been described in the Eurygaster integriceps Put. since in most cases it is really missing during the active period of life in the fields. The author has found this membrane in young well-fed adult bugs at the end of the preparatory period for the passive part of life. It also exists during the time the insect spends in its summering and hibernating places, but is of varying thickness in the same

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The Peritrophic Membrane Inside the Intestine of
Eurygaster integriceps Put.

SOV/20-126-6-65/67

individual and thus not easily recognizable. The membrane is secreted by all epithelium cells of the mid intestine and thus, according to Wigglesworth's classification (Ref 16), is a primary peritrophic membrane. Figure 1 shows the peculiarities of the location of the membrane, figure 2 its formation. In larvae of each of the 5 age groups (skinnings) the membrane is absent, just as well as in young adult bugs during active nutrition and assimilation of food (Refs 5, 6). In hibernated bugs recommencing nutrition the membrane is not to be found. A purely mechanical protective function of the intestinal epithelium is logically impossible. The author agrees with references 10-12, 14, which hold the membrane to be responsible for a gradual and more economical effect of the enzymes on the contents of the intestine. There are 2 figures and 16 references, 8 of which are Soviet.

ASSOCIATION: Institut morfologii zhivotnykh im. A. N. Severtsova Akademii nauk SSSR (Institute of Animal Morphology imeni A. N. Severtsov of the Academy of Sciences, USSR)
PRESENTED: March 25, 1959, by Ye. N. Pavlovskiy, Academician
SUBMITTED: March 24, 1959
Card 2/2

17(1)
AUTHOR:

Bocharova-Messner, O. M.

SOV/20-128-1-53/58

TITLE: The Functional Role of the Different Parts of Alimentary Canal
in Eurygaster Integriceps Put.

PERIODICAL: Doklady Akademii nauk SSSR, 1959, Vol 128, Nr 1, pp 198-201
(USSR)

ABSTRACT: In the present paper the changes of special features in the
structure of pancreas and intestine were investigated during
different states of the organism and life periods of
eurygaster integriceps put. Among others, I. F. Trukhanov's
(Ref 2) and D. M. Fedotov's (Ref 4) papers are mentioned. A
number of functional characteristics of the different parts of
alimentary canal could be explained by experiments and by
histochemical indices. The investigations had the following
results: the alimentary canal of eurygaster integriceps put,
not only warrants a normal course of the digestive process,
but has other additional functions. The intestine is a peculiar
organ regulating the water balance of the organism. It supplies
water in case of a deficiency and removes superfluous water from
the organism. Reserve substances, fat, glycogen and uric acid,

Card 1/3

SOV/20-128-1-53/58

The Functional Role of the Different Parts of Alimentary Canal in Eurygaster Integriceps Put.

the final product of metabolism, are deposited in the epithel. In the intestine there are bacteria symbiants which take part in metabolism and in digestion. The observation of functional peculiarities in parts of the alimentary canal of eurygaster integriceps put. involves some corrections regarding the morpho-functional method of analyzing its state. For the description of the state of salivary glands, characteristic of the ability of ingestion, it is necessary to consider the relative sizes of its front and its back part (Table 1, Fig 2). The main processes of the hydrolysis of food and of the absorption of hydrolysis products take place during the transference of the food from the first into the second and especially into the third part of the mid-intestine. This fact allows the conclusion that the filling of the third part is not a sign that eurygaster integriceps put. is well nourished for hibernation. This, however, indicates continued active digestion, incomplete conservation of food, or the fact, that the digestive process is again started (during hibernation) in consequence of unfavorable wintering conditions. There are

Card 2/3

The Functional Role of the Different Parts of Alimentary Canal in *Eurygaster Integriceps* Put. SOV/20-128-1-53/58

2 figures, 2 tables, and 9 references, 3 of which are Soviet.

ASSOCIATION: Institut morfologii zhivotnykh im. A. N. Severtsova Akademii nauk SSSR (Institute of Morphology of Animals imeni A. N. Severtsov of the Academy of Sciences, USSR)

PRESENTED: May 22, 1959, by Ye. N. Pavlovskiy, Academician

SUBMITTED: April 27, 1959

Card 3/3

BOCHAROVA-MESSNER, O.M.

Digestive system of the shield bug Eurygaster integriceps Put.
and functional specificity of its parts. Vred. cherep. 4:6-32
'60. (MIRA 14:11)

(Eurygasters)
(Digestive organs--Insects)

CHUDAKOVA, I.V.; BOCHAROVA-MESSNER, O.M.

Change in the functional and structural characteristics of the wing muscles of the house cricket Acheta domestica L. in ontogeny.
Dokl. AN SSSR 164 no.2:469-472 S '65. (MIRA 18:9)

1. Institut morfologii zhivotnykh im. A.N. Severtsova AN SSSR.
Submitted October 30, 1964.

BOCHAROVA-PROTOPOPOVA, YE. M.

(d)

The Post-Irradiation Effect in Plant Cells and the Means of Post-Irradiation Protection

N. I. Shapiro and E. M. Bocharova-Protopopova

3

In the course of a study of nuclear damage in dry barley seed cells, two types of post-irradiation effect have been demonstrated, one dependent on O₂, the other on temperature. Soaking irradiated seeds in O₂-saturated water, or heating them in water to 53°, increased the chromosome aberration rate markedly as compared with soaking of seeds under normal conditions. The two after-effects were found to be independent. At the same time it was shown that the O₂ dependent after-effect could be prevented by soaking irradiated seeds in a solution of sodium metabisulphite or alanine. The anti-radiation effect of alanine is not related to previously known modes of action of protective substances.

Chromosome aberration data will be used to discuss the possible nature of the post-irradiation effect, as well as the possible mechanism of action of the protector.

Institute of Biophysics, Academy of Sciences of the USSR, Moscow

96

report presented at the 2nd Intl. Congress of Radiation Research,
Harrogate/Yorkshire, Gt. Brit., 5-11-Aug 1962

BOCHAROVA-STEPANOVA, T.V.

Method for study and preoperative preparation of patients with
chronic suppurative processes in the lungs. Nauch. rab. asp. i
klin. ord. no. 6:154-165 '60. (MIRA 14:12)

1. II kafedra klinicheskoy khirurgii (zav. prof. B.K.Osipov)
TSentral'nogo instituta usovershenstvovaniya vrachey.
(LUNGS--DISEASES)

BOCHAVAR, A.A., akademik; NOVIK, P.K.

Effect of the composition of aluminum-zinc alloys on the
value of size variation of specimens subjected to cyclic thermal
treatment. Dokl.AN SSSR 112 no.6:1041-1042 F '57. (MLRA 10:5)
(Aluminum-zinc alloys---Heat treatment)

YERMOLOV, A.S.; KREYNDLIN, Yu.Z.; YEGOROV, I.V.; BOCHAVER, O.S.; KAL'TER, I.S.

Use of indirect cardiac massage in clinical practice. Khirurgija
40 no.7:36-40 Jl '64. (MIRA 18:2)

1. Kafedra obshchey khirurgii lechebnogo fakul'teta (zav. - prof.
V.A. Ivanov) II Moskovskogo gosudarstvennogo meditsinskogo insti-
tuta imeni Pirogova.

YERMOLOV, A.S.; BOCHAVER, O.S.

Surgical treatment in injuries of the main arteries. Khirurgia
40 no.11:63-66 N '65. (MIRA 18:7)

1. Klinika obshchey khirurgii lechebnogo fakul'teta (zav. - prof.
V.A.Ivanov) II Moskovskogo gosudarstvennogo meditsinskogo instituta
imeni Pirogova.

Bochay, M. P.

137-58-2-3050

Translation from: Referativnyy zhurnal, Metallurgiya, 1958, Nr 2, p 117 (USSR)

AUTHOR: Bochay, M. P.

TITLE: On the Strength of Metals During the Welding Process (K voprosu o prochnosti metallov v protsesse svarki)

PERIODICAL: V sb.: Prochnost' i avtomatizatsiya svarki. (MVTU, 71),
Moscow, Mashgiz, 1957, pp. 46-53

ABSTRACT: A hypothesis on the intergranular strength of metals during welding advanced by N. N. Prokhorov, based on the fact that the strength of metal during welding is determined by the joint effects of two factors: the mechanical (rate of increase in deformation in accordance with temperature) and metallurgical (change in the "brittle" temperature interval) is set forth. A method of the qualitative assessment of the hot-crack sensitivity of metals during welding at critical rates of deformation is described, and the results of investigations of strength and plasticity of Al and its alloys AMTs and AMG-Z in the region of the embrittlement temperature interval are presented. A critical analysis of theoretical propositions and methods of quantitative evaluation of hot-crack sensitivity of welds, suggested by the American investigators

Card 1/2

137-58-2-3050

On the Strength of Metals During the Welding Process

Apblett and Pellini, is offered. Bibliography: 11 references.

V.S.

1. Metals--Welding--Metallurgical effects 2. Metals--Strength--Effects of
welding 3. Metals--Deformation--Effects of welding

Card 2/2

BOCHAY, M. P.: Master Tech Sci (diss) -- "The mechanical properties of aluminum alloys in the process of crystallization, and their connection with the formation of heat fissures in welding". Moscow, 1958. 14 pp (Min Higher Educ USSR, Moscow Order of Lenin and Order of Labor Red Banner Higher Tech School im N. E. Bauman), 150 copies (KL, No 6, 1959, 131)

Bochay, M.P.

SOV-135-58-2-1/18

AUTHORS: Prokhorov, N.N., Doctor of Technical Sciences, Professor;
Bochay, M.P., Engineer

TITLE: Mechanical Properties of Aluminum Alloys in the Temperature Interval of Crystallization in Welding Processes (Mekhanicheskiye svoystva alyuminiyevykh splavov v intervale temperatur kristallizatsii pri svarke)

PERIODICAL: Svarochnoye proizvodstvo, 1958, Nr 2, pp 1 - 6 (USSR)

ABSTRACT: The purpose of the described experimental investigation was to find mechanical properties of Al-Cu and Al-Si alloys in the temperature interval of initial crystallization, i.e. when hot crack formation occurs. Information includes detailed description of the testing machine (Fig.1). Existing literature [Ref.1-5] on this subject is discussed and results of the experiments are presented with the following conclusions: 1) alloys with a low (Cu 0.5% Si-0.4%) or a high (Cu-3 to 7%; Si 1.5 to 5%) content are relatively fast in restoring strength in the temperature interval; 2) alloys

Card 1/2

Mechanical Properties of Aluminum Alloys in the Temperature Interval of
Crystallization in Welding Processes SOV-135-58-2-1/18

with a content of Cu 1 to 2% and Si 0.6 to 1% are relatively slow in restoring strength in proportion to the dropping temperatures; 3) eutectic alloys possess the highest strength reserve. S.V. Lashko-Avakyan prepared the investigated specimens. There are 7 graphs, 1 diagram, 8 photos and 5 Soviet references.

ASSOCIATION: MVTU imeni Baumana (MVTU imeni Bauman)

Card 2/2

1. Aluminum alloys--Mechanical properties 2. Aluminum
alloys--Temperature factors

BOCHAY, M.P., prepodavatel', kand.tekhn.nauk

Intercrystalline strength of aluminum alloys subjected to welding. Izv.vys.ucheb.zav.; mashinostr. no.7:80-83 '59.

(MIRA 13:6)

1. Moskovskoye vyssheye tekhnicheskoye uchilishche imeni Baumana.
(Aluminum alloys--Metallurgy)

8/549/62/000/106/005/010
I003/I203

AUTHOR: Prokhorov, N.N., Doctor of Technical Sciences, Professor, and
Bochay, M.P., Cand. Techn. Sciences

TITLE: Determination of the intercrystalline strength of alloys during
solidification

SOURCE: Moscow. Vyssheye tekhnicheskoye uchilishche. [Trudy] no. 106, 1962.
123-128. Svarka tsvetnykh splavov i nekotorykh legirovannykh stalei

TEXT: In order to avoid hot-cracking it is necessary to have a sound
knowledge of the chemical composition as well as of the processes taking place
in the weld. In the present work the variation in strength and plasticity of
Al-Cu alloys during solidification was investigated and conclusions were drawn
as to their resistance to hot-cracking during welding. Alloys with a low
plasticity in the zone of hot brittleness also display the lowest resistance to
hot-cracking. There are 5 figures and 2 tables.

Card 1/1

BOCHBAR, A.A., akademik; ZHADAYEVA, O.S.

Variation of the microhardness of metals in relation to the depth of penetration of an indentor and the condition of the surface layer. Isv.AN SSSR
Otd.tekh.nauk no.3:341-348 '47. (MLRA 6:12)

1. Institut metallurgii im. A.A.Baykova Akademii nauk SSSR. 2. Institut
mashinovedeniya Academii nauk SSSR. (Metals--Testing)

BOCHDAŁEK, Roman

SURNAME (in caps); Given Names

3

Country: Poland

Academic Degrees:

Affiliation: Chair of Epizootiology, Veterinary Division, College of Agriculture (WSR - Wyższa Szkoła Rolnicza), Wrocław;
Director: Tadeusz SOBIFCH, Prof dr
Source: Warsaw, Medycyna Weterynaryjna, No 4, April 1961, pp 209-211.

Data: "Reverin and Omnamycin in the Treatment of Canine Distomper."

Co-author:

NOŁACKI, Jerzy, Clinic of Infectious Diseases, Veterinary Division,
College of Agriculture (WSR - Wyższa Szkoła Rolnicza), Wrocław; Director: Jerzy LIPANOWICZ,
Docent dr

BOCIDALEK, ROMAN

SURNAME, Given Names

Country: Poland

Academic Degrees: not given

(5)

Affiliation:

Source: Warsaw, Medycyna Weterynaryjna, Vol XVII, No 7, July 1961,
pp 400-401.

Data: "Sigmamycin in the Treatment of Canine Distemper."

Authors:

BOCIDALEK, Roman, Faculty of Epizootiology (Katedra Epizootiologii),
Veterinary Division (Wydzial Weterynarii), College of Agriculture
(WSR-Wyzsza Szkoła Rolnicza), Wrocław; Director: Prof. Tadeusz
SOBIECH, Dr.

NCWACKI, Jerzy, Clinic of Infectious Diseases (Klinika Chorob
Zakaznych), College of Agriculture, Wrocław; Director:
Jerzy LIPANOJICZ, Docent dr.

82

GRZYWINSKI, Leszek; BOCHDALEK, Roman

Experimental toxoplasmosis in dogs. Wiad. parazyt. 10 no.4:
381-382 '64

1. Katedra Parazytoligii i Chorob Inwazyjnych i Katedra
Epizootiologii Wyższej Szkoły Rolniczej, Wrocław.

GRZEMBICKI, Leopold; BOCHDAŁEK, Roman

Experimental toxoplasmosis of cats. Wiad. parazytol. 11 no. 5:
453-465 '65.

1. Katedra Parazytologii i Chorob insuwowych i Katedra Epidemiologii Wyższej Szkoły Rolniczej, Wrocław.

BOCHIK, A.P.

[Steering ships mechanically] Upravlenia sudnom s mekhanicheskim
dvigatelyem. Moskva, Izd-vo Ministerstva morskogo i rechnogo flota,
1953.

(Navigation) (Anchorage)

(MIRA 7:8)

BOCHEK, A.P., kapitan dal'nego plavaniya; MEZENTSEV, G.A., redaktor;
STUDENETSKAYA, V.A., tekhnicheskiy redaktor.

[Piloting a steam or diesel-powered vessel] Upravlenie sudnom s mekhanicheskim dvigatelyem. Moskva, Izd-vo Ministerstva morskogo i rechnogo flota, 1953. 67 p.
(MIRA 7:5)
(Navigation)

PETROV, Mikhail Klement'yevich; BOCHIK, A.P., redaktor; NELDOVA, Ye.S.
redaktor; TIKHONOVA, Ye.A., tekhnicheskiy redaktor.

[Navigation through ice] Plavanie vo l'dakh. Moskva, Izd-vo
"Morskoi transport", 1955. 254 p. (MLRA 8:11)
(Ice-breaking vessels)

"APPROVED FOR RELEASE: 06/09/2000

CIA-RDP86-00513R000205710018-7

BOCHEK, A.

BOCHEK, A., kapitan dal'nego plavaniya.

Loss of the training vessel "Pamir" by the German Federal Republic.
Mor. flot 18 no.2:28 F '58. (MIRA 11:2)
(Pamir (Ship)) (Germany, West--Training ships)

APPROVED FOR RELEASE: 06/09/2000

CIA-RDP86-00513R000205710018-7"

BOCHEK, Aleksandr Pavlovich; GRIGOR'IEV, Vissarion Vissarionovich;
DUBININ, Aleksandr Iosifovich; MEDVEDEV, Vasiliy Fedorovich;
PETROV, Mikhail Klement'yevich [deceased]; YANKOVICH, Vladimir
Nikolayevich; PETIN, M.I., red.; TIKHONOVA, Ye.A., tekhn.red.

[Marine practice] Morskaia praktika. Pod obshchel red.V.N.
Lankovicha. Moskva, Izd-vo "Morskoi transport." Pt.2. 1959.
418 p. (MIRA 13:1)

(Navigation)

KOLOTOV, N.A.; BOCHIK, A.P., red.; PETIN, M.I., red.izd-va; LAVRENOVA,
N.B., tekhn.red.

[Damages incurred by seagoing ships and their prevention]
Avarii morskikh sudov i ikh preduprezhdenie. Moskva, Izd-vo
"Morskoi transport," 1959. 231 p. (MIRA 12:12)
(Marine accidents) (Ships--Maintenance and repair)

PETROV, M.K. , kapitan dal'nego plavaniya; BUKHANOVSKIY, I.L.,
retsenzent; DENISOV, N.I., spets. red.; BOCHEK, A.P., spets.
red.; TROFIMOV, A.V., tekhn. red.

[Marine signaling] Morskaia signalizatsiia. Moskva, Izd-vo
"Morskoi transport," 1952. 271 p. (MIRA 16:7)
(Merchant marine--Signalizing)

"APPROVED FOR RELEASE: 06/09/2000

CIA-RDP86-00513R000205710018-7

BOCHEK, A., kapitan dal'nego plavaniya

Safety measures during anchorage. Mor. flot 25 no.3:23 Mr '65.
(MIRA 18:4)

APPROVED FOR RELEASE: 06/09/2000

CIA-RDP86-00513R000205710018-7"

VUKOLOV, Ye.A.; NEGOVSKIY, A.S.; ROSTOVTSIV, N.N.; KISML'ROD, L.I.;
MALYSHEV, V.I.; IORDANOVA, Z.A.; BOCHEK, F.I.

Melting of electrocorundum in a lined casing. Prom.energ.
15 no.3:18-19 Mr '60. (MIRA 13:6)
(Corundum)

8(5)

AUTHORS:

Golembo, Z.B., Candidate of Technical Sciences;
Bochek, I.A., Engineer

SOV/143-59-3-2/20

TITLE:

Using Digital Computers for the Selection and the
~~Efficient~~ Arrangement of Regulating Equipment for
Transverse Balancing of Long-Distance Power Lines
(Vybor i ratsional'naya rasstanovka reguliruyushchey
apparatury dlya poperechnoy kompensatsii dal'nikh
liniy peredach pri pomoshchi tsifrovых mashin)

PERIODICAL:

Izvestiya vysshikh uchebnykh zavedeniy - Energetika,
1959, Nr 3, pp 12-17 (USSR)

ABSTRACT:

The capacity of long-distance power lines must be sufficiently high for providing applicable economical power transmission indexes. Various balancing methods are used for increasing the transmission capacity of power lines. The investigation of power line load conditions showed that the best voltage control effect is achieved with an even distribution of the transverse balancing equipment along the power lines. Time-consuming calculations are re-

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SOV/143-59-3-2/20

Using Digital Computers for the Selection and the Rational Arrangement of Regulating Equipment for Transverse Balancing of Long-Distance Power Lines

quired for selecting the proper control equipment, its type, capacity and location, taking into consideration the different load conditions of a power line. Therefore, the authors present a method for performing the calculations for the selection and the most rational arrangement of the transverse balancing equipment on long-distance power lines on a digital computer. They show a block diagram of the calculation program and an example of such calculations performed on a M-2 computer (for the 500 kv version of the power line Stalingrad GES - Moscow). For performing such calculations, the authors recommend using the following equations:

$$U_{k+1}^2 = \left(U_k - \frac{P_k r_k + Q_k x_k}{U_k} \right)^2 + \left(\frac{P_k x_k - Q_k r_k}{U_k} \right)^2$$

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SOV/143-59-3-2/20

Using Digital Computers for the Selection and the Rational Arrangement of Regulating Equipment for Transverse Balancing of Long-Distance Power Lines

$$P_k = P_{k-1} - \frac{P_{k-1}^2 + Q_{k-1}^2}{U_{k+1}^2} r_k - P_{ok}$$

$$Q_k = Q_{k-1} - \frac{P_{k-1}^2 + Q_{k-1}^2}{U_{k-1}^2} X_{k-1} + U_k^2 Y_k$$

whereby U_k^2 , U_{k+1}^2 are the voltage moduli V_k and V_{k+1} at the start and end of a member; Q_k , P_k are the active and reactive power components, summed at point k ; r_k , X_k are the resistance and inductive reactance of the k member; P_{ok} is the active power tapped at point k ; and Y is the line-to-ground conductance at point k .

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SOV/143-59-3-2/20
Using Digital Computers for the Selection and the Rational Arrangement of Regulating Equipment for Transverse Balancing of Long-Distance Power Lines

There are 1 circuit diagram, 1 block diagram and 2 Soviet references.

ASSOCIATION: Laboratoriya upravlyayushchikh mashin i sistem AN SSSR (Laboratory of Control Machinery and Systems of the AS USSR)

SUBMITTED: July 17, 1958

Card 4/4

KOCHERK, I. A.

LIDSKIY, Viktor Borisovich; OVSYANNIKOV, Lev Vasil'yevich; TULAYKOV,
Anatoliy Nikolayevich; SHABUNIN, Mikhail Ivanovich. Prinimali
uchastiye: ABRAMOV, A.A.; ~~KOCHERK, I.A.~~; YEVGRAFOV, M.A.; ZIKOV,
A.A.; KARABEGOV, V.I.; KARIMOVA, Kh.Kh.; KUDRYAVTSEV, L.D.;
KUTASOV, A.D.; SHURA-BURA, M.R.; SHCHEGLOV, M.P. SOLODKOV,
V.A., red.; KRYUCHKOVA, V.N., tekhn.red.

[Problems in elementary mathematics] Zadachi po elementarnoi
matematike. Moskva, Gos.izd-vo fiziko-matem.lit-ry, 1960. 463 p.
(MIRA 14:1)
(Mathematics--Problems, exercises, etc.)

DOCHEK, I.A.; ANTIPOV, I.N., otv.red.; ORLOVA, I.A., red.;
KORKINA, A.I., tekhn.red.

[Program for calculating eigenvalues and eigenvectors of a
symmetrical matrix]. Programma vychislenii sobstvennykh znach nii
i sobstvennykh vektorov simmetricheskoi matritsy. Moskva, 1964.
23 p. (Akademiia nauk SSSR. Vychislitel'nyi tsentr. Standartnye i
tipovye programmy BESM-2, no. 7) (MIRA 17:6)

BOČEK, L.V.

SUBJECT

USSR/MATHEMATICS/Applied mathematics

CARD 1/1

PG - 198

AUTHOR

BOČEK L.V.

TITLE

On numerical integration of equations in the complex.
Vydslit.mat.vydslit.techn. 2, 94-96 (1955)

PERIODICAL

reviewed 6/1956

The author gives several formulas for the numerical integration of $dw/dz = f(w, z)$, $w(z_0) = w_0$ in a region of the complex z -plane if $f(w, z)$ is an analytic function. If e.g. w is known in the points z_1 , $z_2 = z_1 + h$, $z_3 = z_1 + ih$, then the value for $z_4 = z_1 + (1+i)h$ is given by

$$w_4 = \frac{1}{2} (w_2 + w_3) + \frac{1}{6} [2(1+i)f_1 + (3i+2)f_2 + (3-2i)f_3] + R \text{ with } |R| \leq \frac{7}{288} |h|^4 |w^{(4)}|;$$

if w is known in the points z_1 , $z_2 = z_1 + (1+i)h$, $z_3 = z_1 + 2h$, $z_4 = z_1 + (1-i)h$, then the value for $z_5 = z_1 + h$ is given by

$$w_5 = \frac{1}{4} (w_1 + w_2 + w_3 + w_4) + \frac{1}{16} (f_1 - if_2 - f_3 + if_4)h + R \text{ with } |R| \leq \frac{1}{8!} |h|^8 |w^{(8)}|.$$

1. Bobet, L. V. On numerical integration of equations in a complex region. Vyčisl. Mat. Výroční. Techn. 2, 94-98 (1955). (Russian)

In this paper formulas are obtained for the numerical integration of the differential equation $dw/dz = f(z, w)$ under the condition that $f(z, w)$ is analytic in a simply connected domain Ω .

Two cases are considered:

1) $w(z_0) = w_0$, $w'(z_0) = 0$,

2) $w(z_0) = w_0$, $w'(z_0) \neq 0$.

For each case formulas are derived which give the value of w at a point z from the values of w and fw at a set of points. The following cases are treated: 1) $A(z_0 + h, z_0 - h)$, $S(z_0 + h, z_0 - h)$, $C(z_0 + h, z_0 - h)$, $D(z_0 + h, z_0 \pm i)$, 2) $A(x_0 + ih)$, $S(x_0 + ih)$, $C(x_0 + ih, z_0 \pm h)$, $D(x_0 + ih, z_0 \pm h)$, 3) $A(z_0), S(z_0), C(z_0, z_0 \pm h), D(z_0, z_0 \pm h)$. Rotations through 180° and translations to other points of the plane give formulas sufficient for most situations. Error terms are supplied.

W. E. Milne (Corvallis, Oregon)

ACC NR: AT6013570 IJP(0) JD/GD
(N) SOURCE CODE: UR/0000/65/000/000/0331/0338

AUTHOR: Smushkevich, V. Z.; Kravets, V. A.; Bochek, S. A.

ORG: Institute of Material Science Problems, AN UkrSSR (Institut problem materialovedeniya AN UkrSSR)

TITLE: Results of the statistical determination of technical parameters for single crystals of silicon carbide to be utilized in production of new types of semiconductor devices

SOURCE: AN UkrSSR. Institut problem materialovedeniya. Vysokotemperaturnyye neorganicheskiye soyedineniya (High temperature inorganic compounds). Kiev, Naukova dumka, 1965, 331-338

TOPIC TAGS: ~~single crystal~~, silicon carbide, semiconductor single crystal, light source, SEMICONDUCTOR DEVICE, RESISTANCE, ELECTRIC CONDUCTIVITY SPECIFIC

ABSTRACT: The quality of the commercial single crystals of silicon carbide are analyzed statistically. Out of 30,000 commercial samples of SiC approximately 6000 were selected for a quality check to determine which of them were of sufficiently high quality to be used in the manufacture of semiconductor devices. These selected SiC single crystals were first ground with boron carbide powder to 200-300 micrometer and treated with a KOH-KNO₃ melt at 650°-700°C. Specific resistance and the number of crystal lat-

Card 1/2

L 32673-66

ACC NR: AT6013570

tice defects were determined for each sample. It was found that 10-30% of SiC samples exhibit mixed types of electrical conductivity. Some 20-30% of the samples were found to suffer from ununiform specific resistance characteristics. About 40% of the SiC samples had inclusions of carbon (1-100 micrometers in diameter). Only 10-30% of the SiC samples tested could pass the specific resistance and conductivity type standards. No conclusion was reached as to what fraction of the commercial SiC samples would be in the 1-10 ohm·cm specific resistance range, i. e., acceptable for the production of digital and symbol indicators. It was estimated that only 5-10% of the commercial SiC single crystals would meet the quality standards for the production of high temperature diodes. Inclusions of carbon were found to be the major objection to SiC crystals with respect to quality standards, since these inclusions facilitate p-n transitions. Some 50% of the commercial SiC single crystals were found to be acceptable for the production of pulse light sources. The statistical distribution for commercial SiC single crystals according to specific resistance is graphed. Orig. art. has: 3 figures, 2 tables.

SUB CODE: 07,20,09/ SUBM DATE: 03Jul65/ ORIG REF: 002

Card 2/2 BLC

9,4340

27967
S/185/61/006/004/012/015
D274/D303

AUTHORS: Babak, L.G., Bochek, S.A., Genkyna, S.M., Dobrolezh, S.O., Zhydkov, V.A. and Smushkevych, V.Z.

TITLE: Commercial silicon-carbide as a material for point contact diodes

PERIODICAL: Ukrayins'kyy fizychnyy zhurnal, v. 6, no. 4, 1961,
541-547

TEXT: The possible use of commercial silicon-carbide (produced by the Tashkent and Zaporozhe plants) for high temperature point contact diodes is considered: This would be economically profitable. Specimens of the black and green modification obtained at the Zaporozhe plant were studied as well as those of the green modification of the Tashkent plant. Spectral analysis showed the presence, in the specimens, of chemical impurities: Fe, Mg, Mn, Al, Ti. It was established that black silicon-carbide crystals have hole-conductivity, and the green - electron conductivity. The resistivity was

Card 1/3

Commercial silicon-carbide...

27967
S/185/61/006/004/012/015
D274/D303

measured by the four-probe method. A figure shows the resistivity (in statistical %) of the various types of specimens. In studying the rectifying properties of diodes, a low-ohmic contact between metal-electrode and crystal is necessary. Several methods of producing such contacts were investigated. It was found that contacts obtained by cathode pulverization of platinum were most convenient, both with regard to low-ohmic character and temperature stability. The resistance of the contacts with the black crystals was $10^2 - 10^3$ ohm, and that of the green crystals - $10^3 - 10^4$ ohm. A model of a point-contact diode was constructed and studied. Current voltage characteristics of point-contact tungsten-silicon carbide are then examined. Figures show the characteristics at various temperatures (from 20-520°C). The rectifying factor K is determined. A table shows, for comparison, the rectifying properties of models made of the different types of silicon-carbide. The electrical properties of commercial silicon-carbide were studied with a view to using these materials for high temperature point-contact rectifiers. A study of the temperature dependence of current-voltage character-

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Commercial silicon-carbide...

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istics of models showed that the green crystals of the Zaporozhe plant have, at room temperature, a rectifying factor $K = 10^4 - 10^5$ which decreases rapidly with increasing temperature. The black crystals of the Tashkent plant have $K = 10^2 - 10^3$ (at room temperature) which increases with temperature, this increase being the greater, the higher the resistivity of the crystal. The black crystals of the Tashkent plant, with a resistivity exceeding 5 ohm/cm, are the most suitable for point-contact diodes. Diodes, similar to the model ones, could be used for rectifying radio frequency signals of 1-5 volts at temperatures up to 500°C. There are 6 figures, 2 tables and 4 references: 2 Soviet-bloc and 2 non-Soviet-bloc. The reference to the English-language publication reads as follows:
Electronics, 74, no. 12, 1960.

44

ASSOCIATION: Instytut metalokeramiky i spetsial'nykh splaviv AN USSR, Kyyiv (Institute for Metal Ceramics and Special Alloys, AS UkrSSR, Kiyev)

SUBMITTED: November 26, 1960

Card 3/3

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CIA-RDP86-00513R000205710018-7

OINZBURG, M.G.; BLYUM, E.M.; BOCHER, M.A.

Bibliographic index. Trudy Gos. nauch.-issl. inst. psich. 42:
220-245 '65.
(MIRA 18:9)

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"APPROVED FOR RELEASE: 06/09/2000

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BOCHELYUK, I.T., inzh.

Test specimen of the KIP-2 cutter-loader. Ugol' Ukr. 3 no. 32/3-
Mr '59. (MIRA 12:5)
(Coal mining machinery)

APPROVED FOR RELEASE: 06/09/2000

CIA-RDP86-00513R000205710018-7"

BOCHENEK, Adam

MACHETA, Bugdan; BOCHENEK, Adam

Tracheal endoscopy and bronchoscopy with general anesthesia with evipan and D-tubocurarine. Polski tygod. lek. 9 no.28:877-879
12 July 54.

1. Z Zakladu Ftizjochirurgii Instytutu Doskonalenia i Specjalizacji Kadr Lekarskich w Zakopanem; kierownik: doc. dr Wit Rzepecki, i z Sanatorium im. dr. O.Sokolowskiego, dyr.: dr Emilian Siegiel.

(ENDOSCOPY,

trachea, anesth., hexobarbital with tubocurarine premedication)

(TRACHEA,

endoscopy, anesth., hexobarbital with tubocurarine premedication)

(BRONCHOSCOPY, anesthesia and analgesia,
hexobarbital with tubocurarine premedication)

(CURARE,

tubocurarine, adjuvant in hexobarbital anest. in bronchoscopy & tracheal endoscopy)

(BARBITURATES, anesthesia and analgesia,

hexobarbital in bronchoscopy & tracheal endoscopy, with tubocurarine)

BOCHENEK, Adam

Tuberculosis of the larynx and lungs. Polski tygod.lek. 10 no.10:
297-300 7 Mar 55.

1. Z Panstw. Sanat. p-gruzliczego "Kruk" - Gostynin, dyr. dr. J.
Niemiec Szczecin, Al.Jednosci Narodowej 12.
(TUBERCULOSIS, PULMONARY, complications,
laryngeal tuberc.)
(TUBERCULOSIS, LARYNGEAL, complications,
pulm. tuberc.)

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ACC NR: AP6017914

SOURCE CODE: P0/0095/65/013/11-/0047/0053

AUTHOR: Bochenek, K.

ORG: Electromagnetic Theory Division, Institute of Fundamental
Technical Problems, Polish Academy of Sciences (Zaklad teorii
lacznosci, instytut podstawowych problemow techniki, PAN)

TITLE: Phenomenon of a surface current layer with waves reflected
from an ionized medium

SOURCE: Polska akademia nauk. Bulletin. Serie des sciences techniques,
v. 13, no. 11-12, 1965, 47-53

TOPIC TAGS: magnetic field, wave propagation, primary magnetic field,
electromagnetic wave

ABSTRACT: In a linearized theory the number of continuity conditions
imposed on the ionized-medium boundary decreases by two when the normal
component of the primary magnetic field vanishes, making possible the
formation of a surface current layer. The author analyzes the phe-
nomenon of reflection of a normal component of a primary magnetic

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field tending to zero. The boundaries of the coupling coefficients are observed to be equal to the coupling coefficients calculated from conditions reduced for waves capable of propagation. The conclusions reached are paradoxical in that, as a rule, waves that cease to disperse once they reach a certain limit have coupling coefficients with boundaries other than zero, and, therefore, within the ionized medium, the solution changes continuously. The paradox can be explained by assuming a finite conductivity of the medium. In such a case, absorption of the waves which vanish in the limit, increases greatly, reducing their influence to a narrow boundary layer that may be considered the surface current layer. The article was presented by J. Groszkowski on 1 June 1965. Orig. art. has: 2 figures and 4 formulas. [GC]

SUB CODE: 20/ SUBM DATE: none/ ORIG REF: 002/ SOV REF: 001/
OTH REF: 002

Card

2/2 BIG

WEIMAN, Zygmunt; BOCHENEK, Michal

Double ulna syndrome. Chir. narzad. ruchu ortop. Pol. 29
no.4:547-549 '64.

l. Z Kliniki Ortopedycznej Akademii Medycznej w Krakowie
(p.o. Kierownika: dr med. M. Bochenek).

POL.

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Bachunek J., Plik E. The Change of Free Energy for Reactions of Oxidation of Common Elements Important in the Steelmaking Process.
"Zmiana swobodnej energii reakcji utleniania clci prostych, maja-
cych znaczenie w procesie wytwarzania stalii". Archiwum Górnictwa
i Hutaictwa (PAN). No. 1, 1954, pp. 57-69, 11 tabs.

66-094-3 : C69-1B2

The state of equilibrium for reversible reactions is determined by the value of the change of thermal free energy in these reactions. This value may be determined by A. Krupkewski's formula, using thermochemical values. In cases where reacting substances change their allotropic forms or state, it is necessary to note the relative changes of energy. In the authors' calculations, standard thermal and standard entropy of change values were used, these values being determined for the following substances: aluminium, calcium, chromium, magnesium and nickel. The change of normal free energy in reactions of oxidation for certain elements important in steelmaking were also determined. From the values of the change of the normal free energy calculated from circumstantial formulas within the temperature range 1700 to 2000°K, the authors obtained simplified relations, cited in the article, making it possible to calculate with sufficient accuracy the change of free energy in the range of temperature mentioned.

BOCHENEK, Jan

On certain question for the linear combinations of the eigenfunctions
in the Sturm-Liouville problem. Prace matem Krakow no.7:43-47 '62.

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On zero points of the linear combinations of the eigenfunctions
in the Sturm-Liouville problem. Prace matem Krakow no. 9:15-18
'63.

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Some properties of solutions of elliptic partial differential equations of the second order. Annales Pol math 16 no.2:149-152 '65.

~ some problems in the theory of eigenvalues and eigenfunctions associated with linear elliptic partial differential equations of the second order. Ibid.:153-167

1. Submitted June 15, 1962.

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BOCHENEK, KRISTYN

Electronics
Electromagnetics

DECEASED
c. '63

1964

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BOCHENEK, K. (Warszawa)

Asymptotically expandible solutions of the Hemholtz equation.
Annales Pol math 14 no. 1:49-57 '63.

BOCHENEK, K.

Remarks concerning a dissipative model of magnetogas dynamics. Archiw
mech 1/6 no.3:637-642 '64.

1. Department of Theory of Communication of the Institute of Basic
Technical Problems of the Polish Academy of Sciences, Warsaw.